What is claimed is:

1. In a network having at least a first data source/sink and a second data source/sink coupled together by a physical medium, apparatus for determining at least one protocol capability of said second data source/sink, comprising:

first means, coupled to said first source/sink, for placing a first signal onto said physical medium, said first signal indicating a first protocol capability of said first source/sink;

second means, coupled to said second data source/sink, for receiving said first signal,

third means, coupled to said second data source/sink, for transmitting a second signal onto said physical medium when said second data source/sink has said first protocol capability, said second signal comprising a plurality of pulses spaced-apart by a first time interval, and a third signal, different from said second signal, when said second data source/sink has a second protocol capability, said third signal comprising a plurality of pulses spaced-apart by a second time interval, different from said first time interval;

fourth means, coupled to said first data source/sink, for detecting whether said signal transmitted by said second means is said second signal or said third signal, and

fifth means, coupled to said first data source/sink, for establishing communication with said second data source/sink using said first protocol if said fourth means detects said second signal and using said second protocol if said fourth means detects said third signal.

2. Apparatus, as claimed in claim 1, wherein said first time interval is about 125 microseconds.

3. Apparatus, as claimed in claim 1, wherein said second time interval is about 16 milliseconds.

4. Apparatus, as claimed in claim 1, wherein said second signal further comprises a plurality of data pulses.

5. Apparatus, as claimed in claim 4, wherein each of said data pulses is generated a predetermined time interval after one of said plurality of pulses of said second signal.

6. Apparatus, as claimed in claim 5, wherein said predetermined time interval is about 62.5 microseconds.

7. (amended) In a network having at least a first data source/sink and a second data source/sink coupled together by a physical medium, a state machine apparatus for generating a first signal for transmission over said physical medium, comprising:

means for receiving said first signal over <u>said</u> physical medium indicating a communication protocol capability of a first source/sink;

means for determining whether said first signal has a first period or a second period, said second period being shorter than said first period;

means for outputting a second signal, having said first period, when said first signal has said first period;

means for preventing output of said second signal when said first signal has said second period.

8. In a network having at least a first data source/sink and a second data source/sink coupled together by a physical medium, a state machine apparatus for generating a first pulsed signal for transmission over said physical medium, comprising:

means for receiving said first pulsed signal over said physical medium indicating a communication protocol capability of a first source/sink;

means for determining whether said first pulsed signal has a first period or a second period, said second period being shorter than said first period;

means for outputting a second signal, having said second period, when said first signal has said second period and after a predetermined number of pulses of said first signal have been received.

9. Apparatus, as claimed in claim 8, wherein said predetermined number of pulses is three.

10. (amended) Apparatus, as claimed in claim 8 wherein said first pulsed signal comprises a plurality of periodic pulses and a plurality of data pulse windows located a predetermined period after each of said periodic pulses and further comprising:

means for determining the state [or] of said first signal in at least some of said plurality [or] of data pulse windows.

11. (amended) In a network having at least a first data source/sink and a second data source/sink coupled together by a physical medium, a method for determining at least one protocol capability of said second data source/sink, comprising:

placing a first signal onto said physical medium by said first data source/sink, said first signal indicating a first protocol capability of said first source/sink;

receiving said first signal in said second data source/sink,

transmitting a second signal onto said physical medium by said second source/sink when said second data source/sink has said first protocol capability, said second signal comprising a plurality of pulses [space-apart] spaced-apart by a first time interval, and outputting a third signal, different from said second signal, when said second data source/sink has a second protocol capability, said third signal comprising a plurality of pulses spaced-apart by a second time interval, different from said first time interval;

detecting, in said first data source/sink, whether said signal transmitted by said second means is said second signal or said third signal, and

establishing communication with said second data source/sink using said first protocol if [said fourth means detects] said second signal is detected and using said second protocol if [said fourth means detects] said third signal is detected.

12. A method, as claimed in claim 11, wherein said second signal further comprises a plurality of data pulses.

13. A method, as claimed in claim 12, wherein each of said data pulses is output a predetermined time interval after one of said plurality of pulses of said second signal.

14. In a network having at least a first data source/sink and a second data source/sink coupled together by a physical medium, a method for determining at least one protocol capability of the second data source/sink, comprising:

placing first data pulses onto the physical medium, timing characteristics and pattern of the first data pulses indicating a first protocol capability of the first source/sink;

receiving the first data pulses in the second data source/sink;

transmitting second data pulses onto the physical medium from the second data source/sink, wherein timing characteristics and pattern of the second data pulses indicate the first protocol capability when the second data source/sink has the first protocol capability, wherein timing characteristics and pattern of the second data pulses indicate a second protocol capability when the second data source/sink has the second protocol capability;

detecting whether the second pulses indicate the first protocol capability or the second protocol capability; and

establishing communication with the second data source/sink using the first protocol if the second data pulses indicate the first protocol capability and using the second protocol if the second data pulses indicate the second protocol capability.

15. In a network having at least a first data source/sink and a second data source/sink coupled together by a physical medium, a method for determining a communication protocol capability for data transmission over the physical medium, comprising:

receiving first data pulses over the physical medium;

determining whether timing characteristics and pattern of the first data pulses indicate a first communication protocol capability;

selectively outputting second data pulses in response to the first data pulses, wherein the second data pulses are output if the second data source/sink operates in accordance with the first communication protocol capability; and

preventing output of the second data pulses if the second data source/sink does not operation in accordance with the first communication protocol capability.

16. A method for communicating data between a first data source/sink and a second data source/sink, the second data source/sink operating in accordance with a plurality of protocol capabilities, the method comprising the steps of:

storing information in a first storage location in the first data source/sink;

extracting information from data pulses transmitted from the second data source/sink to the first data source/sink and storing the extracted information in a second storage location;

at the first data source/sink, determining the protocol capabilities of the second data source/sink; and

determining the method for communicating data between the first data source/sink and the second data source/sink based upon the determined protocol capabilities of the second data source/sink.

17. The method of claim 16, wherein the first or second storage locations comprise a register, a memory or a table, wherein the information stored in the first storage location comprises signaling rate information and/or channel protocol information.

18. The method of claim 16, wherein the information stored in the first storage location indicates a plurality of protocol capabilities of the first data source/sink and is encoded into a signal comprised of data pulses transmitted from the first data source/sink to the second data source/sink.

19. The method of claim 16, wherein a state machine determines the protocol capabilities of the second data source/sink.

20. The method of claim 16, wherein the data communicated between the first data source/sink and the second data source/sink comprises an isochronous data.

21. The method of claim 20, wherein the isochronous data comprises video data.

22. The method of claim 20, wherein the isochronous data comprises telephone data.

23. The method of claim 16, wherein the data is communicated between the first data source/sink and the second data source/sink in accordance with a protocol selected from the group consisting of: isochronous token ring, isochronous Ethernet, non-isochronous Ethernet, FDDI-II, and X.25.

24. The method of claim 16, wherein the first and second data sources/sinks comprise a portion of a star topology network.

25. The method of claim 16, wherein the first and second data sources/sinks comprise a portion of a non-star topology network.

26. The method of claim 16, wherein the first and second data sources/sinks comprise a portion of a ring topology network.

27. The method of claim 16, wherein the first and second data sources/sinks comprise a portion of a tree topology network.

28. The method of claim 16, wherein a physical medium coupled between the first data source/sink and the second data source/sink comprises a twisted pair, coax cable or fiber optic.

29. A method for communicating data between a first data source/sink and a second data source/sink, the method comprising the steps of:

communicating data between the first data source/sink and the second data source/sink in accordance with a first communication protocol;

exchanging information between the first data source/sink and the second data source/sink, wherein the information is exchanged in the form of data pulses, wherein timing characteristics and pattern of the data pulses indicate protocol capabilities of the first and/or second data source/sinks;

reconfiguring the first and second data source/sinks; and

communicating data between the first data source/sink and the second data source/sink in accordance with a second communication protocol.

30. The method of claim 29, wherein the information that indicates protocol capabilities is stored in a register, a memory or a table.

31. The method of claim 29, wherein a state machine determines the protocol capabilities of the data sources/sinks.

32. The method of claim 29, wherein data communicated between the first data source/sink and the second data source/sink comprises an isochronous data.

33. The method of claim 32, wherein the isochronous data comprises video data.

34. The method of claim 32, wherein the isochronous data comprises telephone data.

35. The method of claim 29, wherein the data is communicated between the first data source/sink and the second data source/sink in accordance with a protocol selected from the group consisting of: isochronous token ring, isochronouse Ethernet, non-isochronous Ethernet, FDDI-II, and X.25.

36. The method of claim 29, wherein the first and second data sources/sinks comprise a portion of a star topology network.

37. The method of claim 29, wherein the first and second data sources/sinks comprise a portion of a non-star topology network.

38. The method of claim 29, wherein the first and second data sources/sinks comprise a portion of a ring topology network.

39. The method of claim 29, wherein the first and second data sources/sinks comprise a portion of a tree topology network.

40. The method of claim 29, wherein a physical medium coupled between the first data source/sink and the second data source/sink comprises a twisted pair, coax cable or fiber optic.

41. A method for communicating data between a first data source/sink and a second data source/sink, the method comprising the steps of:

exchanging information between the first data source/sink and the second data source/sink, wherein the information is exchanged in the form of data pulses, wherein timing characteristics and pattern of the data pulses indicate protocol capabilities of the first and/or second data sources/sinks, wherein the protocol capabilities of the first and second data sources/sinks include at least first and second protocol capabilities;

communicating data between the first data source/sink and the second data source/sink in accordance with a first communication protocol at a first point in time;

configuring the first and second data source/sinks to operate in accordance with a second communication protocol; and

communicating data between the first data source/sink and the second data source/sink in accordance with the second communication protocol.

42. The method of claim 41, wherein the information that indicates protocol capabilities is stored in a register, a memory or a table.

43. The method of claim 41, wherein a state machine determines the protocol capabilities of the data sources/sinks.

44. The method of claim 41, wherein data communicated between the first data source/sink and the second data source/sink comprises an isochronous data.

45. The method of claim 44, wherein the isochronous data comprises video data.

46. The method of claim 44, wherein the isochronous data comprises telephone data.

47. The method of claim 41, wherein the data is communicated between the first data source/sink and the second data source/sink in accordance with a protocol selected from the group consisting of: isochronous token ring, isochronouse Ethernet, non-isochronous Ethernet, FDDI-II, and X.25.

48. The method of claim 41, wherein the first and second data sources/sinks comprise a portion of a star topology network.

49 The method of claim 41, wherein the first and second data sources/sinks comprise a portion of a non-star topology network.

50. The method of claim 41, wherein the first and second data sources/sinks comprise a portion of a ring topology network.

51. The method of claim 41, wherein the first and second data sources/sinks comprise a portion of a tree topology network.

52. The method of claim 41, wherein a physical medium coupled between the first data source/sink and the second data source/sink comprises a twisted pair, coax cable or fiber optic.